Applicants' attorney wishes to thank the Examiner in charge of the application for the courtesies extended to him at the interview on March 26, 2003 at which time, the office action and the rejections therein were discussed.

Claims 12 to 26 were rejected under 35 USC 112, first paragraph, as containing new matter. The Examiner deemed the limitation of "a temperature at least about 5°C above its operating temperature" and the limitation in claim 24 were not supported by the original disclosure.

Applicants respectfully traverse these grounds of rejection since the amended claims are clearly supported by the specification. Claim 24 has been cancelled and generic claim 12 has now been amended to define the membrane as being a polymeric proton exchange fuel cell membrane which is clearly supported by the specification on pages 6 and 7. The new matter objected to by the Examiner has been deleted and it is now recited as heating the membrane to a temperature above its glass transition temperature which is supported by the last four lines of page 6 wherein it is stated that the ratio of the amorphous in the crystalline phase is adjusted by means of a controlled thermal treatment at a temperature higher than the glass transition temperature. The term "phase" has been changed to "state". Moreover, a typographical error in claim 25 and a clarification has been inserted into the claims for clarify. Therefore, the amended claims are believed to properly define the invention and withdrawal of this ground of rejection is requested.

Claims 12 to 16, 20, 22 and 23 were rejected as being anticipated by the Shimoda patent and claims 18, 19, 21, 25 and 26 were rejected as being obvious thereover taken in view of the Murphy et al patent. With respect to Applicants' arguments, the Examiner indicated that the claim did not indicate that the membrane was a solid non-porous membrane and therefore, Applicants were arguing limitations not set forth in the claims.

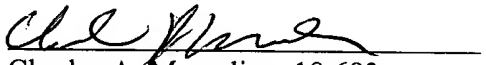
Applicants respectfully traverse these grounds of rejection since the Shimoda patent taken alone or in view of the Murphy et al patent would in no way teach Applicants' invention nor renders the same obvious or anticipated. With respect to the Examiner's position that the Shimoda patent was not distinguished from, Applicants' have amended the claims to clearly recite that it is a fuel cell membrane which is clearly supported by the specification as filed and the original claims. As noted in the previous response, fuel cell membranes are not micro-porous membranes such as that disclosed by Shimoda but, rather, a solid non-porous membrane through which the protons permeate by moving through by water bound to the sulfate groups in the membrane. In contrast thereto, Shimoda describes a micro-porous membrane used for filtration of hot water and radioactive materials as can be seen from lines 16 to 32 of column 5 and lines 25 to 51 of column 33. The physical porosity of Shimoda would render the same completely ineffective in a fuel cell since the porosity would destroy the ability of the membrane to separate protons from electrons and therefore, Shimoda does not anticipate or render obvious Applicants' invention.

The Murphy et al patent is directed to completely non-analogous subject matter distinct from the porous membrane of Shimoda. As noted previously, Murphy et al is directed to a fuel cell membrane but does not teach Applicants' temperature conditioning to obtain heat resistance as taught by Applicants' invention. In line 64 of column 6 through line 11 of column 7 quoted by the Examiner, this shows that the membranes filled with phosphotungsict acid are known to have improved temperature resistant properties since they retain water better. However, this is not any heat treatment as used in Applicants' invention and this additive is not in Applicants' membranes. Therefore, one skilled in the art would not combine the references as the Examiner has done with the benefit of Applicants' disclosure since they are directed to non-analogous membranes having different functions. Therefore, withdrawal of these grounds of rejection is requested.

In contrast thereto, the Shimoda patent is directed to a membrane which is not for a fuel cell but, rather, a porous membrane useful for filtration of hot water and radioactive materials as can be seen from lines 16 to 32 of column 25 and lines 25 to 51 of column 33. Therefore, the Shimoda patent does not anticipate or render obvious Applicants' invention.

In view of the amendments to the claims and the above remarks, it is believed that the claims clearly point out Applicants' patentable contribution and favorable reconsideration of the application is requested.

Respectfully submitted,
Muserlian, Lucas and Mercanti



Charles A. Muserlian, 19,683
Attorney for Applicants
Tel. # (212) 661-8000

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Enclosures

MARKED UP VERSION OF CLAIMS SHOWING CHANGES MADE

Claim 12 (thrice amended) A method for conditioning a polymeric proton fuel cell exchange membrane for operation at temperatures above 100°C, the method comprising the steps of:

a: heating the membrane to an elevated temperature above its transition temperature ~~at least about 5°C above its said intended operating temperature~~;

b: selecting a desired percentage of conversion of the membrane polymer from an initial amorphous state ~~phase~~ to a crystalline state ~~phase;~~

c: holding said membrane at the ~~an~~ elevated temperature for a predetermined interval, wherein the predetermined interval has been selected to permit the desired percentage conversion of amorphous to crystalline state ~~material~~; and

d: returning the membrane to ambient temperature.

Claim 16 (twice amended) The method of claim 12 wherein the percentage conversion of crystalline state ~~material~~ is determined using X-ray spectroscopy.

Claim 25 (amended) A method of operating a polymer electrolyte membrane fuel cell at elevated temperatures equipped with a membrane conditioned by claim 12 comprising supplying an oxygen containing gas at the cathode ~~cathod~~ and supplying at the anode a fuel selected from the group consisting of hydrogen, reformate, methanol and ethanol.